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ABSTRACT

This brief report presents results of a statistical study comparing the effectiveness of full-day, alternate day kindergarten programs with the more traditional half-day, every day programs. An introduction to the data tables traces the development of kindergartens in the U. S. and Minnesota, in particular. Data were collected on 787 kindergarten children over a 4-year period (1971-74) in the Grand Rapids public schools. All schools participated in the full-day, alternate day program in the 1974 school year, which was used as the base year. The Metropolitan Readiness Tests, Form B, were used to measure school preparedness. Analysis of the data indicated that the full-day, alternate day programs did not hinder school readiness. Responses to a parent questionnaire supplied data on the effectiveness of the program in meeting the physical, social, emotional, and instructional needs of the child. Both parent and teacher response to the new program was favorable. (ED)

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A SCHOOL DISTRICT LOOKS AT AN ALTERNATIVE TO HALF-DAY, EVERY DAY KINDERGARTEN PROGRAMS

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"Early childhood education is not new; it is centuries old. In the writings of the ancient Greeks and in both the Old and New Testaments, the importance of early childhood education was recognized as a great influence in the life of an adult and his achievements."[1]

In America, the first kindergarten, a private one, was set up by Mrs. Carl Schurz in Watertown, Wisconsin, in the year 1855-56. Other private kindergartens and kindergartens sponsored by churches and social welfare agencies were established from the east to the west coast in the United States. The first city in the United States to incorporate kindergartens into its public school system was St. Louis, Missouri in 1873.

In the 1890's, kindergartens had a ready impact on educational policy. Educators demanded that public education be extended downward to include the kindergarten. Said Superintendent Andrew S. Draper of Cleveland at the annual meeting of the National Education Association in 1892, "The duty of the state is clear. . .Then let the friends of the kindergarten and the friends of the school system prepare legislation which will give sanction and approval of the state to the kindergarten, which will make it the duty of the state school authorities to aid its advancement and which will modify the school age and otherwise open the way for its general introduction."[2]

[1]National Education Association, Department of Elementary School Principals, Those First School Years, N.E.A., Washington, D.C., 1960, p. 218.

[2]Andrew S. Draper. "The Duty of the State in Relation to the Kindergarten." In: Proceedings. New York: National Education Association, 1892. pp.185-86.

Minnesota's first kindergarten was established at Winona Normal School in 1880. The president of the Normal School, Irwin Shepard, had been greatly impressed by the demonstration kindergarten which he had seen at the Centennial Exposition in Philadelphia in 1876. He expressed the hope that, "the kindergarten spirit would in time permeate the whole elementary school." Mrs. Sarah Eccleston was the first kindergarten teacher at Winona.

The legal setting for kindergartens in the State of Minnesota was extablished by the legislature in 1973. Briefly stated, the legislature provided after July, 1974, kindergarten instruction be provided for all eligible children either in the district or in another district. This action brings to a close an extended effort by many individuals and organizations to make available public school kindergartens for all eligible students in Minnesota. It is interpreted that schools in Minnesota would need permission from the Commissioner of Education not to provide a kindergarten program.

Minnesota has experienced excellent progress in making full year equivalent kindergarten programs available to young children throughout the state prior to the passage of mandatory kindergarten legislation in 1973. Ten years ago less than half of the operating schools offered full year kindergarten programs, in the 1972-73 school year twenty-nine operating school districts did not have full year equivalent kindergarten programs and in the 1973-74 school year only twelve of slightly over 400 operating school districts did not have full year or equivalent kindergarten programs.

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In Minnesota, parents have the option to wait until a child is seven years of age before entering into a school program as the compulsory attendance law is from seven to sixteen years of age.

As the kindergarten program developed in Minnesota, a change in the attendance pattern began to evolve. A small number of school districts requested permission to operate their kindergarten programs on a full-day, alternate day basis which was a departure from the previous half-day, every day kindergarten program. The requests were initiated due to the high cost of providing transportation for kindergarten children in large rural school districts.

One such school district was Independent School District #318, in Grand Rapids, Minnesota. Grand Rapids is a very large school district containing approximately 1.2 million acres and covering 20,000 square miles making transportation a high cost item. The local officials determined that the cost of noon busing would be excessive, therefore, alternatives were explored.

As a result of the program change to the full-day, alternate day from the half-day, every day, considerable interest and discussion was generated by parents, teachers and administrators due to each program's advantages and disadvantages. The discussion, in the absence of relevant research data and in this area of childhood, prompted a statistical study to compare the full-day, alternate day kindergarten program with the half-day, every day kindergarten program in the Grand Rapids Public Schools.

To add depth to the statistical study, Dr. Gerald Kleve's parent and teacher questionnaires were administered. Dr. Richard Landry, Associate Professor, University of North Dakota, Educational Bureau of Research, did the statistical analysis of the study.

The question asked in the statistical study was, "Are there differences in the performances of kindergarten children who attend under different attendance patterns but for equivalent amounts of time?" The conceptual framework asked for the children who attend kindergarten all day on alternate days are prepared for first grade as well as children who attend kindergarten half-days every day.

Data were collected on 787 kindergarten children over a four year period in the Grand Rapids Public Schools. The years involved were 1971, 1972, 1973, and 1974. All schools participated in the full-day, alternate day program for the 1974 school year. All comparisons were made using 1974 as a base. The Metropolitan Readiness Tests, Form B, were used to measure school preparedness. The tests yield the following scores: Word Meaning, Listening, Matching, Alphabet, Numbers and Copying. These six tests and a total score, an overall measure of school readiness, were used as the dependent variables in the analyses.

Data Analyses: Because data were not available on all schools for all four years, two analyses were performed. First, a comparison of change over the four years was undertaken to test for significant differences over the four years.

Second, data for years 71, 72 and 73 were compared to data for the year 74 to test the primary hypothesis of full-day versus half-day. A peripheral question was also inspected. Differences between boys and girls were also reported.

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Results of First Comparison: Data over the four years were compared and the means, standard deviations are presented in Table I. Six out of seven of the comparisons are highly significant (F = 2.62 at .05 or F = 3.83 at .01 needed for significance). The only variable that showed no significant change was Matching. An inspection of the means indicates that scores are highest in 1974, the base. A year by year comparison is undertaken in the next analysis.

TABLE I

Analysis of Variance Tests for the Four Years on the Metropolitan Readiness Tests

VARIABLE	MEANS				S.D.	F
	1971	1972	1973	1974		
Word Meaning	9.86	11.88	10.24	11.06	2.81	20.58**
Listening	11.25	11.34	11.40	12.27	2.54	8.11**
Matching	9.64	10.23	9.98	10.38	2.96	2.40
Alphabet	12.07	13.34	13.31	14.53	3.59	17.59**
Numbers	13.95	16.46	14.95	16.77	4.48	18.58**
Copying	7.65	9.75	7.55	9.29	3.52	20.81**
Total	64.43	72.98	67.37	74.20	14.83	21.02**

**Significant with 3 and 783 degrees of freedom beyond .01 level

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Results of Second Comparison: Dunnett's t tests were performed for the second comparison to compare each other year with the base year, 1974. These t values are presented in Table 2. The means for these analyses were presented in Table I. In the 1973-74 comparisons, six out of seven comparisons are significantly in favor of the full-day programs. The seventh, Matching, is in favor of 1974, but not significant. In the 1972-74 comparisons, two are significant in favor of full-day programs and one in favor of half-day programs. Four show no significant differences. In the 1971-74 comparisons, all seven are significant and in favor of the full-day programs over the half-day programs. Overall, out of 21 comparisons, 15 are in favor of ull-day, one in favor of half-day, and five are not significantly different.

TABLE 2

Dunnett's t Values Comparing Years 71-72-73 (half-day) to year 74 (full-day) on Metropolitan Readiness Tests

Variable	73-74	72-74	71-74
Word Meaning	2.99*	-3.16**	4.51**
Listening	3.46**	3.87**	4.19**
Matching	1.33	.51	2.55*
Alphabet	3.44**	3.50**	7.21**
Numbers	4.16**	.73	6.68**
Copying	5.11**	-1.41	4.97**
Total	4.75**	.88	7.02**

*Significant at .05 level
**Significant at .01 Level

NOTE: Negative t in favor of half-days and positive t in favor of full-days

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The kindergarten teachers' questionnaire indicated they are not against the all-day, alternate day program, but they expressed concern regarding the attendance pattern. The kindergarten teachers did feel that the all-day, alternate day program had two major advantages:

1) the children can participate in more of the total school program because of the extended day in such things as music, art and physical education, and

2) they could extend the periods to do more of the "fun" activities.

(The reader may request findings by writing the authors.)

The results of two-hundred seven of two-hundred sixty parent questionnaires are presented in Tables III through X. The questionnaires were sent home with the pupils. Included was a self-addressed envelope to be mailed back to the district office. The results indicated that the comments were mostly positive and similar to the comments found in the State Department of Education's study.

TABLE III

PHYSICAL NEEDS OF CHILD

REST

Question asked: Was rest a problem for your child with the all-day, alternate day schedule?

RESPONSE	PERCENTAGE
My child had no problem.	65%
My child needed a longer nap at school	3
My child felt the nap was too long.	3
My child needed extra rest on the non-school dyas	8
Day was too long all year	4
Day was too long in the fall	5
My child fell asleep on the bus	5
Other	7

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TABLE IV

PHYSICAL NEEDS OF CHILD

MEALS

Question asked: Did the noon lunch program create any difficulties for your child?

RESPONSE	PERCENTAGE
Yes	02%
No	84

TABLE V

SOCIAL NEEDS OF THE CHILD

Question asked: Did your child make friends in the classroom?

RESPONSE	PERCENTAGE
My child seemed to feel a part of the kindergarten group.	76%
My child had a few friends who lived nearby.	11
My child did not seem to make many friends.	01

TABLE VI

EMOTIONAL NEEDS

Question asked: How did your child adjust to the varied school attendance pattern?

RESPONSE	PERCENTAGE
My child adjusted easily.	55%
My child wanted to go to school every day.	63
My child did not want to leave home.	02
My child adjusted better as the year progressed.	12
Other	06

TABLE VII

INSTRUCTIONAL NEEDS

Question asked: Did your child experience difficult learning because of the scheduling?

RESPONSE	PERCENTAGE
My child seemed to have no trouble.	70%
My child seemed to forget.	08
My child seemed to have difficulty in some kinds of learnings but not others.	11
Other	07

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TABLE VIII

INSTRUCTIONAL NEEDS

Question asked: Did you experience difficulties with the kindergarten schedule?

RESPONSE	PERCENTAGE
We had no problem.	63%
We had trouble with babysitters.	01
We had difficulty remembering the schedule.	05
We liked the schedule.	38
We did not like the schedule.	05
Other	08

TABLE IX

INSTRUCTIONAL NEEDS

Question asked: Did any other children in your family attend half-day, daily kindergarten sessions in previous years?

RESPONSE	PERCENTAGE
Yes	66%
No	34%

The results of an important question, "If parents had children in the family who had attended half-day sessions previously and now had children in the all-day alternate day program, which program do they prefer?" is found in Table X. Of the 114 who answered this question, 67% favored full-day, alternate days and 33% favored the half-day session.

TABLE X

INSTRUCTIONAL NEEDS

Question asked: If the answer was yes in Table IX, which program do you prefer?

RESPONSE	PERCENTAGE
Half-day, daily	33%
Full-day, alternate day	67%

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In planning for 1974-75, the kindergarten parents were surveyed with a questionnaire. The results are found in Tables XI through Table XIII. Once again, the full-day, alternate day was favored in Table XI and parents divided nearly evenly between all-day, every day when asked to compare to the existing alternatives in Table XIII.

TABLE XI

INSTRUCTIONAL NEEDS

Question asked: Which program do you prefer for your kindergarten child?

RESPONSE	PERCENTAGE
Half-day, every day	36%
Full-day, alternate day	62
No preference	02

TABLE XII

INSTRUCTIONAL NEEDS

Question asked: Did any of your children attend the full-day, alternate day programs in previous years?

RESPONSE	PERCENTAGE
Yes	15%
No	85

TABLE XIII

INSTRUCTIONAL NEEDS

Question asked: If an all-day, every day kindergarten program was available, would you prefer that over the other two types of attendance?

RESPONSE	PERCENTAGE
Yes	42%
No	58

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CONCLUSION

The results from the statistical study are clear. The full-day, alternate day program as compared to the half-day, every day program, revealed that it is certainly not detrimental to school growth and readiness of kindergarten children. In fact, in many instances, full-day programs were shown to be helpful and beneficial. The data, in no way, indicates that the full-day, alternate day programs are in any way a hindrance to school readiness.

Using the full-day, alternate day program, student absenteeism could be a significant factor in achieving continuous, sequential and comprehensive kindergarten experience for children learning experiences that could be avoided by a half-day, every day program.

The parent questionnaire results indicate favorable response to the all-day, alternate day program and in general supported by the kindergarten teacher questionnaire results. As indicated by the preference of this year's kindergarten parents, they also prefer an alternate day, full-day program. The decision for 1974-75 was to proceed with the all-day, alternate day program.

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